

Historic, Archive Document

Do not assume content reflects current scientific knowledge, policies, or practices.

62.27
✓ = 1913
LIBRARY RECEIVED
JUN 8 1920
Department of Agriculture

\$18,000

Per Year on 40 Acres



COMMERCIAL ONION GROWING

By

A. O. GILBERTSON

THE "KROP KRANK"

*"It has taken me thirty-three years to
write this book. You ought to spend
at least thirty-three hours to study it."*

—Gilbertson

Published by
THE A. O. GILBERTSON COMPANY
ST. ANSGAR, IOWA

Why I Send Broadcast This Wonderful Story

It may seem strange to a great many that I should be willing to tell about the great profits that I have been making in commercial onion growing. A great many perhaps would think that I should remain silent and keep this experience to myself for fear that I might create such a great interest in commercial onion growing that the production would be greater than the demand. To this I have but one answer: "If while you were parched in the desert, with a band of fellow men, you found a spring that contained more water than you could drink in a lifetime, would you try to drink it all yourself, or would you summon your associates to share your find?" That is exactly the situation with regard to the onion market. The demand for really good onions is practically unlimited, and my advice to you, as a commercial onion grower, is not to worry about the future onion market, but to spend your time in producing an onion of extraordinary qualities, of which the most important of all is extraordinary keeping quality, so that in case the onion market becomes flooded, with inferior onions in the fall of the year, as it very often does, you can keep your onions until late winter or early spring, when good, sound, dry onions always command a good price.

We all have our hobbies. Intensive farming is mine, and it is more than a hobby with me; it is a business proposition.

I am farming intensively and scientifically; first, because there is big money in it; second, because I like it.

I have been in this work all my life, and if in all these years that I have been doing this experimenting, I have worked out ideas that will help anyone else to make their high-priced land produce more money, I am more than willing that he should have this information.

Perhaps a summary of boiled-down advice to the new beginner at this time would not be out of place.

In the first place, I want to caution a beginner, who has never had any experience in the growing of onions before, not to become too enthusiastic and try to grow too large a field of onions the first year, if he does not have his ground in the best of condition. My advice to you would be to put in a smaller acreage, so that you will be in a position to give your field thorough care.

Remember that whatever is worth doing at all is worth doing well. I might explain further in this same connection just what I consider is really necessary in order to have a field in fairly good condition for starting an onion field the first year.

In the first place, don't try to grow onions in a commercial way on foul, poor land. Understand, you can grow a profitable crop on ordinary corn land, provided that you enrich your soil with a liberal application of well-rotted barnyard manure. Your chances will then be good of growing a large crop. In this way you can afford to spend a liberal amount of money in keeping your field clean from weeds, as you can readily figure out, from the actual figures that I have given you in this book, that onions are a very big paying crop when handled right, and will stand a large producing expense, provided your ground is rich enough to produce a large crop.

After you have put your land in condition so that it is right for onion growing, see that it is kept so. Plant onions that come from a hardy stock and do not let weeds get in. Remember that "one year's seeding means seven years' weeding." The various details of successful onion growing are given in this book. All I can do on this page is sum up the essence in the one sentence, "Get your land in good onion-growing condition and keep it so."



A PART OF OUR FORTY-ACRE FIELD AT HARVEST TIME.—This shows the way we harvest our onions, the strippers leaving the crates in rows, a sufficient distance apart so that our team and wagon can pass between the rows, loading the crates from each side of the platform. There were about 14,000 bushel crates in the field at the time this photograph was taken.

By A. O. GILBERTSON

**K R O P
K R A N K**

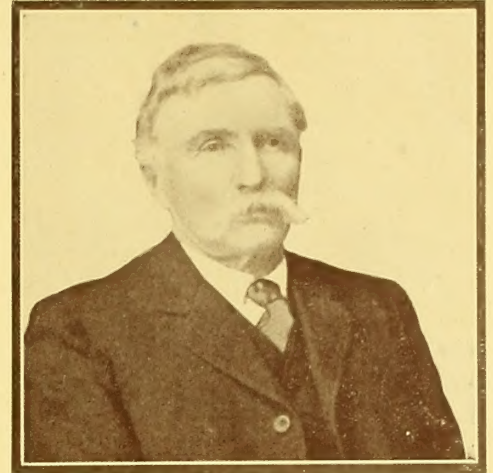
ST. ANSGAR, IOWA

Three Generations of Krop Kranks or a Third of a Century In Commercial Onion Growing

Krop Kranks are what they call us in and around St. Ansgar. That's because G. G. Gilbertson, a pioneer settler, whose picture appears at the top of the page, appreciated and practiced the principles of scientific farming of special crops. He foresaw that land would greatly increase in value and this was the only way to make the land pay a proper profit on the increased valuation.

In the early days Mr. Gilbertson's ideas were frowned upon. People considered he was wasting his time fussing with special crops. Some even went so far as to intimate that he was not entirely sane. Within a few years the sanity of the senior Gilbertson was established beyond question and the term "Krop Krank," given first in derision, has become a title of honor and respect.

Today the value of specialized farming is admitted by all, even by those who do not practice it. Farmers have come to realize that land is too high priced to pay a fair profit, and that in order to make money they must devote their time to growing some special crop for which there is a steady demand at a high price. There



are numerous special crops of this kind, but for many reasons none is perhaps better adapted for the average farmer than onions. They are hardy, will grow on any soil that has been properly prepared and the demand for good onions far exceeds the supply.

The special crop farming started by G. G. Gilbertson is being continued by his son, A. O. Gilbertson, the present head of the House of Gilbertson. My father thoroughly trained me in this work and I consider it a pleasurable duty to follow the plans laid down by my father. The mission of specialized farming is an important legacy and I mean to continue the work until in turn it slips from my shoulders and is handed down to our Master Alton, whose picture you see at the bottom of this page.

This youngster is still in the hey-day of his childhood and I hope it will be years before he must assume the burdens of business, yet already, in his childish way, he is beginning to take an interest in the business he will some day own. Young Alton loves to play in the onion fields and the knowledge that papa has harvested 1,200 bushels an acre gives him almost as much pleasure as a new toy.

If you will accompany me on a trip over my onion field, through the pages of this book, I will endeavor to give you father's and my experience in commercial onion growing, covering a period of over thirty-five years, and explain to you our methods, which we have found the most successful and profitable.

In the first place, I want to outline a few things that we have found from experience as absolutely necessary in the successful growing of onions.

The first and most important point to consider in commercial onion growing is that of procuring the very best pedigreed seed that you can buy. This not only holds good in onion seed, but in all farm seeds as well, as we cannot expect to grow a large crop of onions or any other farm crop, without using the best pedigreed seeds, as the difference in cost between the very best seed of any kind that you buy and the cost of ordinary seed is only a small matter after all, as compared with the results obtained at the time of harvest.

The next important point to consider, if you are going to be successful in commercial onion growing, is the thorough and systematic preparation of the soil.

By A. O. GILBERTSON

**K R O P
K R A N K**

ST. ANSGAR, IOWA

Almost any good corn land, that will grow an average crop of corn, say from 50 to 60 bushels per acre, can be made an ideal onion field by adding a liberal amount of well-rotted barnyard manure.

What I mean by the thorough preparation of your soil is the proper plowing, disking, pulverizing, dragging, etc., in order to put your ground in the very best of condition before the seed is planted.

In order to produce a large-paying crop of onions the first year on your onion field, you must make your ground as rich as possible, by the liberal application of well rotted barnyard manure, at the rate of from 30 to 40

loads per acre. Now, this is absolutely necessary from the fact that the tendency of onions the first year they are grown on a field is not to ripen up uniformly unless your ground is very rich.

The next important thing for you to consider is the uniform distribution of the onion seed, as you cannot afford to grow anything but a full crop of onions on land of this kind, from the fact that it will cost you no more, as far as cultivation, hoeing, etc., is concerned, to produce a full crop, and this can only be accomplished by being able to secure a full, uniform stand.

The Kind of Soil Best Adapted to Commercial Onion Growing

Many people are prevented from taking up onion growing by an erroneous idea that only certain soil is adaptable. This is far from the truth.

In the large mail which I receive every day people ask me many questions and I am always glad to answer them. Almost every day I receive numerous requests for information regarding the soil best adapted for onion growing and where to locate the onion field. These points claim first consideration with most onion growers and in order at once to correct any misapprehension I have made the question of soil the first subject in this book.

In selecting your field for commercial onion growing you should be very careful, from the fact that in order to be the most successful in growing onions, you should grow your onions on the same field every year, as by doing this your crop will improve from year to year. The longer you grow onions on the same field, the more successful you will be.

In the first place, your crop will be earlier from year to year, your crop will ripen up more uniformly, that is, provided, of course, that you follow our instructions, and treat your ground to a liberal application of well-rotted barnyard manure, say about every four to five years.

LOCATION.

The most important thing to be considered, as far as location is concerned, is the fact that an onion crop is a very bulky crop to handle, consequently, if you can select your onion field as near a market as possible the better it will be.

It is usually considered that river bottom land will make a better onion field, from the fact that as a rule, it is not so much exposed to the elements, as naturally, when onions are grown on the same field year after year, and our intensive farming methods are practiced, the soil becomes worked up so thoroughly that it is subject to drifting more or less. Consequently any field that is located in such a way that it has a protection from the elements would be considered more favorable.

If it is possible to make a choice in selecting your onion field, the first consideration is river bottom land. If this is impossible the next best is any level piece of ground. The more level the better.

SOD.

Land that has been into pasture for a number of years, if thoroughly prepared, could be made into an ideal onion field.

In preparing a piece of sod for an onion field, the most satisfactory way that we have found is to plow your sod by thoroughly pulverizing and harrowing it several times, so that this sod is thoroughly subdued. After this is finished, take your stirring plow and again replot your field to the depth of about six to eight inches. In this way you will not turn under a large amount of soil, which usually causes your field to dry out during the growing season.

Another advantage in preparing your ground in this way, your sod or what there is left of it, is turned under so that it will not bother your seeder, cultivator, etc.

EARLY PREPARATION OF THE SOIL.

We commence the preparation of our soil just as soon as it is dry enough, so that the dirt will crumble up nicely when stirred, which, in this locality, is about the first week in April. Remember that the onion plant is a great deal like wheat, that unless it is gotten into the ground just as early as possible in the spring, even although all other conditions are favorable, the chances are against a big crop.

SUBSOILING.

While we have grown a large crop of onions without subsoiling, all other conditions, being favorable, yet we always make a practice of subsoiling our ground at least every other year. The great advantage of subsoiling your ground is that it stores up a large quantity of moisture in the soil, which will greatly assist in carrying your crop over a dry spell. Subsoiling, in loosening up the subsoil, acts a great deal, one might say, like a reservoir in storing up moisture during the early spring months. In this way the young plants have what might be termed a reservoir of moisture to draw from to help carry them over a dry spell, if need be.

THE SUBSOILER EXPLAINED.

A subsoiler is a plow, built on a mould fashion. This plow is run in the bottom of each furrow, as a mould. It does not throw a furrow at all. It simply follows up your stirring plow in the bottom of each furrow, and loosens the subsoil, I might say, in such a way, for example, that a six-inch or eight-inch furrow, after the subsoiler has passed in the bottom of this furrow, would be filled almost full by the heaving and loosening of the subsoil.

By A. O. GILBERTSON

K R O P
K R A N K

ST. ANSGAR, IOWA

Fertilizers and Fertilizing

While I have always recognized that our main standby is well-rotted barnyard manure, yet I have done considerable experimenting with commercial fertilizers, and have met with varied success. I want my readers to bear in mind one thing, however, that if you are going to be successful in commercial onion growing, you must be in a position to have available a liberal quantity of barnyard manure, as this absolutely forms the foundation and backbone of successful commercial onion growing. Even though everything else is favorable, you cannot grow a large, profitable crop of onions without a liberal quantity of well-rotted barnyard manure. This does not only hold good with onions alone, but with all other farm crops as well.

Now, I do not wish it to be understood but what you can use commercial fertilizers successfully, when used in connection with barnyard manure. In no other way, however, have I found that it paid me to invest in commercial fertilizers. Say at the rate of 100 to 200 pounds per acre, of some brand which contains a large per cent of available potash, your crop will ripen up earlier, as well as a great deal more uniform. We will say, for instance, that you have treated your field to a liberal quantity of well-rotted barnyard manure. Now, in adding commercial fertilizers, right here is where the trouble commences, as all packing house fertilizers, as I call them, are absolutely too high priced for what plant food they contain.

In the first place, onions are heavy feeders on potash, and inasmuch as we are trying to grow such an enormous crop of onions, in order to produce this large crop, we must supply what is termed a "balanced ration" in plant food. We might say, in the sense and relation that it is necessary to supply balanced rations in feeding your cattle, in order to make your herd produce to their fullest capacity, whether it is in making beef or milk.

Your rations must be balanced in order to produce the best results.

The same law governs the feeding of any large crop. In the first place, in supplying plant food to any crop, it is very essential that the grower understands just what plant food his crop requires, whether it is potash, nitrogen or phosphorus, or a combination of all.

The biggest trouble in using barnyard manure exclusively is that in order to supply sufficient available potash for a large crop of onions it is necessary to use such a large quantity of manure that you are overfeeding your crop with other plant foods and especially with nitrogen with the results that your crop is liable to grow too much to tops, and will not bottom successfully.

Now then here is where a judicious supply of commercial fertilizer containing a large percentage of available plant food in the way of potash can be used profitably, and the only brand of fertilizer that we have found in our experience to meet these requirements is a potash salt imported from Germany, by the German Kali Works of Baltimore and Chicago which contains 48 per cent of available potash.



PHOTOGRAPH shows a pile of barnyard manure that was hauled on our ground during the winter and early spring, and repiled once during the summer. By this method we get our manure thoroughly rotted and in the very best of condition to be spread on our onion fields during the early fall. In this way we also destroy the largest percentage of all foul weed seeds. "THE GILBERTSON WAY."

By A. O. GILBERTSON

**K R O P
R A N K**

ST. ANSGAR, IOWA



A GLIMPSE OF ONE OF OUR FIELDS WHERE WE GROW THE SEED FROM OUR FAMOUS STRAIN OF GRANDPA'S PRIDE LONG KEEPERS.—This photograph was taken just before the seed bulbs were ready to harvest. I want to call your particular attention to our method of thorough cultivation, "THE GILBERTSON WAY."

The Kind of Tools We Use in Preparing the Soil

The first tool that we use, as shown in the accompanying photograph, is a steel roller. I always like to run a roller over my field the first thing in the spring, just as soon as the ground becomes dry enough so that it will work up mellow, in order to crush all the lumps, as naturally the lumps in the field dry out first, and unless these high lumps, so to speak, that project above the surface of the ground, are crushed by rolling before the ground is stirred, they will not be nearly as easily pulverized afterwards.

You will notice that I am a crank in leaving my ground as rough as possible in the fall from the fact that in our intensive farming methods, if the ground is not left in this rough condition, during the early fall and winter the ground is liable to drift more or less.

Following up the roller, we use a special pulverizer of our own construction as shown in photograph. This pulverizer is made similar to a lever harrow, with the exception of the teeth being made from cold, rolled steel shafting, one-half inch in diameter, and twelve inches long, and set two inches apart. This harrow or pulverizer does excellent work, from the fact that it is possible to set the teeth at any desired angle, by the means of a lever on each section, and in this way, it not only crushes and pulverizes all the lumps on the top of the ground, but the teeth work into the ground, and absolutely pulverize the soil. For best results, the operator should ride this tool.

Following this pulverizer you will note that we use a Clark's Double Action Disc Harrow. This is a very valuable tool, and should by all means be in the hands of every up-to-date farmer, as it has a great advantage over an ordinary disc harrow, as it leaves the ground perfectly level, besides doing double work in one operation. The first set of discs throws the dirt outward, and the second set of discs, which follows directly back of the first one, throws the dirt inward in this way leaving the ground in a perfectly level condition.

Following the disc harrow, we use a plank drag pul-

verizer, which is also of our own construction.

Now, in looking at the accompanying photograph, you will notice that this soil preparation is done in one operation, and while this gives the best results, from the fact that it does not give the soil a chance to dry out between the different operations, still, it is not absolutely necessary. We always practice this method, however, from the fact that we have the available help, and also from the fact that we have such a large field of onions, that we have to prepare and plant every year.

After these different tools have passed over the ground, it is then in the very best of condition. In fact, it is a perfect seed bed. With these four special tools that I have described, which require nine horses and four men to operate, and with three of our patented onion planters, it is possible to prepare the soil in this way, and plant about eight acres of onions per day.



A CORNER OF OUR ONION SEED WAREHOUSE, WHICH SHOWS THE WAY WE CURE OUR ONION SEED, AFTER IT IS HARVESTED.—It is very essential that onion seed should have a thorough circulation of air, after it is harvested. This photograph only shows a fractional part of our warehouse, as it is almost impossible to secure a photograph in a large building of this kind, after the seed racks are set up.

By A. O. GILBERTSON

**K R O P
K R A N K**

ST. ANSGAR, IOWA



OUR SPECIAL METHODS OF PREPARING THE SOIL, READY FOR THE ONION PLANTER, THE ROLLING, PULVERIZING, DISCING AND PLANTING BEING DONE IN ONE OPERATION, "THE GILBERTSON WAY."—This photograph was taken about the first week in April.

Planting the Seed

This is by far the most important part of the onion industry, namely, the sowing of the seed. You cannot be too careful in doing this work, as the success or failure in commercial onion growing depends upon whether or not you are able to produce a full and uniform stand in your onion field, as you can see at a glance that if you have spent your time and money in preparing the onion field, in the way of fertilizer, keeping it clean, etc., that it is very essential that you should grow a full crop of

onions every year and this can only be produced by taking the necessary precaution in planting the seed.

Inasmuch as the onion seed, owing to its irregular shape, is one of the hardest seeds for a planter to handle accurately, and from this fact it is very essential that you plant your onion seed just as shallow as you possibly can, and at the same time be reasonably sure that it is planted deep enough so that it will not dry out before it germinates, we always aim to plant our seed from one-half to three-quarters of an inch deep. For this reason, you can plainly see that it is essential to thoroughly prepare your soil and make a thorough seed bed.

It was for this reason, owing to the irregular shape of the onion seed that we started out a few years ago to perfect an onion planter that would handle this difficult seed in such a way that we could produce a perfect stand without any waste of seed, and at the same time, not leave any blank spaces in the rows, as well as to eliminate the necessity of thinning the young plants.

Now, I have tried out every seeder offered on the market, and I have found that everyone of the ordinary seeders, without exception, is not able to distribute the seed uniformly; that is, if the seed supply is cut down, so that your bulbs will not be too thick in some places in the row, you will find that they will leave a large per cent of blanks in other places in the row. On the other hand, if you adjust your seed in such a way that it will not leave any blank spaces in the rows, you will find that there will be entirely too much seed in some places, thus making your onions too thick in those places.

Another important feature which we have been able to overcome in the invention of our new onion planter is that we are able to plant the onion seed very shallow, and at the same time eliminate the danger of the seed drying out, from the fact that we have provided on this machine a dust shield, in such a way that it allows the shoe proper to open up the furrow, in which the seed is deposited, in absolutely moist dirt. This also allows the covering device, which follows directly back of the shoe,



A SECTIONAL VIEW OF ONE OF OUR CLOD CRUSHERS, OF OUR OWN CONSTRUCTION.—The teeth, which are made from cold-rolled steel shafting, are $\frac{1}{2}$ inch in diameter and 10 inches long, and are set 2 inches apart, in wooden crossbeams. By the means of a lever on each section, the teeth can be set at any desired angle. We only use two sections of this clod crusher, as this gives a good team about all that it can stand. The operator usually rides this tool for good results.

By A. O. GILBERTSON

**K R O P
R A N K**

ST. ANSGAR, IOWA

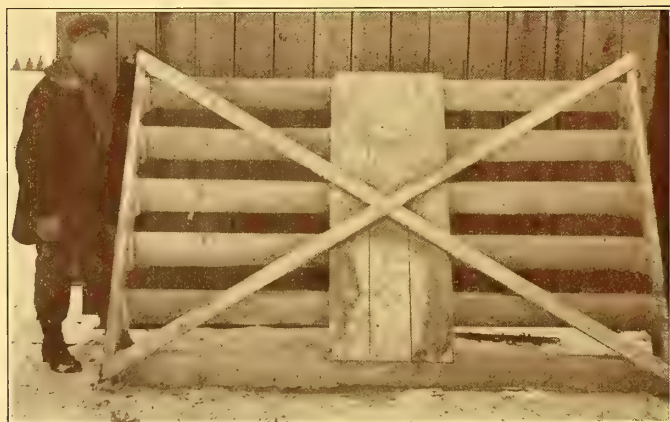
which opens up the furrow, to cover up the seed with only fresh, moist dirt, and as the roller which follows directly back of the covering device rolls the soil down firmly, you can readily see that every seed is deposited in absolutely moist dirt.

In this way, although the seed is planted very shallow, on an average of not more than one-half inch deep, (which is very essential in successful onion growing), the seed will germinate quickly, and as a rule will break through the ground in a very few days, even though we do not have any rainfall, in fact, I would rather not have any rainfall on our onion fields, until after the onions are out of the ground.

This is something that is worthy of your consideration, as you cannot find any other machine on the market today that is provided with this dust shield, consequently, your stand of onions, when planted with an ordinary seeder, will depend largely upon whether or not you are fortunate enough to have rain immediately after your onions are planted.

It was to overcome this difficulty that we have invented, perfected and patented a machine that will handle such difficult seeds as onions accurately. However, we only manufactured a limited number of these machines and placed them on the market the past season. The success of these machines was instantaneous, so much so, that there is scarcely one machine today in the hands of the original purchaser, as owing to the fact that we were unable to supply the demand for these machines, we resold almost all of them for the original purchasers. Our records show that some of these machines were resold as much as six to seven times. For instance, I have a record of two machines in particular, that we used in planting our fields of onions in northern Texas the past season, that were sold and resold seven or eight times, moving from the South to the North, as the season advanced, one machine having put in over 600 acres of onions, and ending up with its last job in Canada. The phenomenal part of this was that these machines resold for their full value every time, namely, \$48.

I am, however, glad to say that we have made arrangements so that we hope to be able to supply the demand somewhat for this machine the coming season, although



A PLANK DRAG OF OUR OWN CONSTRUCTION, WHICH WE HAVE FOUND TO BE JUST ABOUT RIGHT.—The size of this plank drag is 8 feet wide by 5 feet deep. The planks are 6 inches wide by 8 feet long by 1 3/4 inches thick, and set at an angle of about 45 degrees. This is the tool that we use in giving our onion fields the finishing touches. The operator should ride this tool for best results.

I would advise anyone who expects to place an order for one of these machines for the coming spring to send it in in time, as we have in our office at the present time orders for several hundred of these machines that were received last spring and, although we were unable to fill them, our customers requested us to hold their orders up until next spring, and of course, these orders are the first to be filled. It is for this reason, therefore, that I urge you to send in your order without delay.

L. L. NESS.

Producer of Comb and Extracted Honey. Berries and Onions in Season.

Morris, Ill., Jan. 14, 1913.

The A. O. Gilbertson Co.,
St. Ansgar, Iowa.

Gentlemen: Please send me by mail 5 pounds of your Grandpa's Pride Red Globe Onion Seed and 1 pound of your Grandpa's Pride Yellow Globe Onion Seed.

I raised 450 bushels of very nice onions from the seed that I bought of you last year, and sold them for 75c per bushel to the store-keepers here, who told me today that they never had before such good keeping quality of onions, as they had kept in perfect condition until this time, which is something that they were not in the habit of getting onions grown in this locality to keep so well. I am also keeping a few bushels of these onions myself in my cellar and they are surely keeping in perfect condition, so much better than we have ever seen onions keep before. I am surely well pleased with my onion venture with your seed last year.

The reason I want 1 pound of your yellow seed, I raised about 20 bushels last year of your yellow onions, and they are surely nice. Now be sure that you send me the same kind of seed that I bought of you last year, as they are the only kind of onions that I want to grow again next year.

I will surely be pleased to receive a copy of your Big Book on Onion Culture.

Yours truly,
L. L. NESS.

WINS STATE FAIR FIRST HONORS.

Beloit, Wis., Jan. 13, 1913.

The A. O. Gilbertson Co.,
St. Ansgar, Iowa.

Gentlemen: My Grandpa's Pride Onions that I grew from your seed last year did fine, the best onions, as to size, globe shape, and high color at least, that I have ever seen.

Some of them weighed from one to one and one-half pounds. The average weight was about ten to fourteen ounces.

I took some of them to the Beloit Fair. The secretary of the Rock County Fair Association said that it was too bad that I had not entered them in competition for a prize, as they surely would have cleaned up everything that was shown there in the onion line.

He thought so much of them that he asked my permission to take some of them to the state fair at Milwaukee, Wisconsin, and exhibited them in the Rock county exhibit, and they carried off the first honors over and above anything else shown there.

Please quote me your prices on your Grandpa's Pride Onion Seed for next spring, as I do not want to grow any other, from the fact of it's large size and keeping quality.

Yours very truly,
WM. N. SHEPARD.
Beloit, Wis.

By A. O. GILBERTSON

**K R O P K
R A N K**

ST. ANSGAR, IOWA

The Proper Distance to Plant

The distance apart between the rows, that we have settled upon as a standard in our onion fields is twelve inches, although we have found that under certain conditions, for instance, we would advise new beginners, whose soil is not extraordinarily rich, or extraordinarily clean, to plant the rows about fifteen inches apart.

There are several advantages in this: First, it will give your onions more feeding surface, in case your ground is not extraordinarily rich; second, if, at any time during the season, your weeds should get the start of you, and become bothersome, it would give you more room to work among your onions, as well as more room to pile your weeds, in case they should get the start of you in such a way that it would be necessary to pull them by hand, and pile them between the rows.

We advise our growers, especially beginners, to plant their onions fifteen inches apart between the rows, and gradually close up, until you reach the standard of twelve inches.

We have also done considerable experimenting as to the proper distance to plant in the rows. This depends a great deal upon the fertility of the soil. If your ground is extraordinarily rich, like our onion fields for instance, we have found that it will pay to grow as close as on an average of twelve plants to the foot, or an inch apart. For instance, with our patented onion planter, we furnish a disc that will plant the seeds two inches apart, planting two seeds in a hill.

Now, it is only extraordinarily heavy ground, that has been grown onions on for years, and has gotten up to almost a perfect state of perfection in the way of cultivation and fertility, that will stand this amount of seed per acre, as this will be equal to three pounds of seed per acre.

Most of our customers, who use our onion planter, use our planting discs that will plant about two pounds of seed per acre. This will put the seed about three and one-half inches apart, two seeds to the hill. Of course, even this amount of seed per acre requires a good



OUR MASTER ALTON AND TWO CRATES OF OUR LONG KEEPERS, BOTH GRANDPA'S PRIDE.

rich ground.

There is one thing that a beginner should remember and guard against, and that is that the longer you grow onions on the same ground, that is, if you farm according to our intensive farming ideas, which by all means you should do, and bring your land up to a high state of cultivation, under these conditions, it will be well for you to increase your seed per acre, as your ground increases in fertility, until you reach about three pounds of seed per acre, which by all means should mark the limit, no matter how rich your ground is.

There are several reasons for this. In the first place, we want to keep our ground busy, that is, keep it working to its fullest capacity, and in order to do this, as the ground increases in fertility from year to year, it will be in shape to take care of and bring to maturity more bulbs per acre. Consequently, we should increase the amount of seed a trifle each year, until we reach the limit of three pounds per acre.



ONE OF MY EXPERIMENTAL FARMS.—Although this field only yielded a trifle over 700 bushels to the acre, and while I do not claim that this field was seeded thick enough, yet I want to simply show what it is possible to do with one of our patented onion planters, using only one pound of seed per acre. This same experimental field yielded a trifle over 1,200 bushels to the acre the past season, when we used two pounds of seed per acre.

By A. O. GILBERTSON

**K R O P
R A N K**

ST. ANSGAR, IOWA

The Machine That Does the Work

1. Furrow opening shovels of the adjustable type to permit lowering to proper distance for deep or shallow planting.

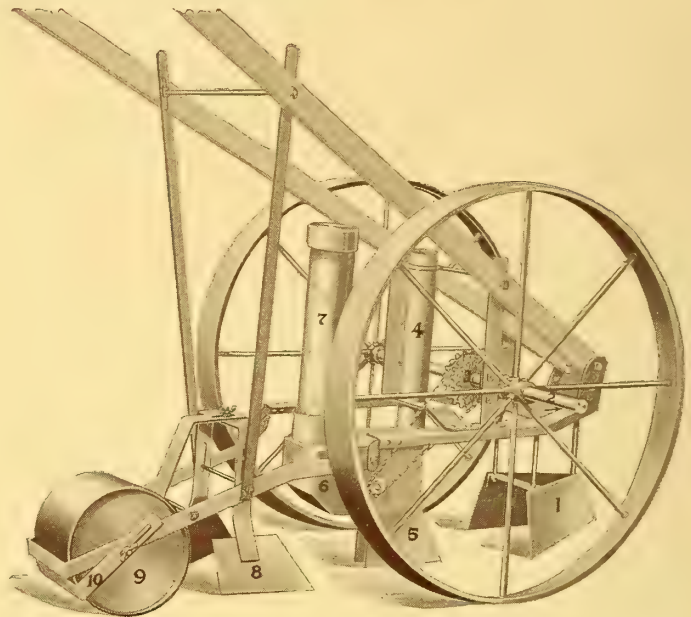
2. Extension wheel which permits the widening or narrowing of the distance between wheels for planting rows any distance from 12 to 24 inches. By means of these adjustable wheels we have entirely done away with any lock or catch thus eliminating any side draft which a catch or lock is bound to produce. The distance apart of your rows is governed by the adjustable feature of the drive wheels. For example, if you had planted one row, in turning to plant row number two, your main drive wheel runs in the same mark made by this same wheel in planting row number one.

3. Adjustable gears or sprocket wheels which drive the planting disc. These are of three different sizes and are so arranged as to permit instant changing from one size to another regulating the speed of planting and automatically producing the proper distance desired between the planted seed. This arrangement takes care of different speeds required over rough and smooth ground.

4. Planter shoe support. Adjustable type. This support permits the raising and lowering of planter shoe so that seed can be planted to any desired depth.

5. A special planter shoe of our own design. This shoe is pointed in front for removing the top soil and enables you to plant seed in moist ground. The action of this planter shoe is located in front of the outlet of the seed hopper and it serves as a wind shield preventing the wind from blowing the seed away before it can enter the ground.

6. Planting disc container, which holds planting wheel with cup attachment as shown in the illustration



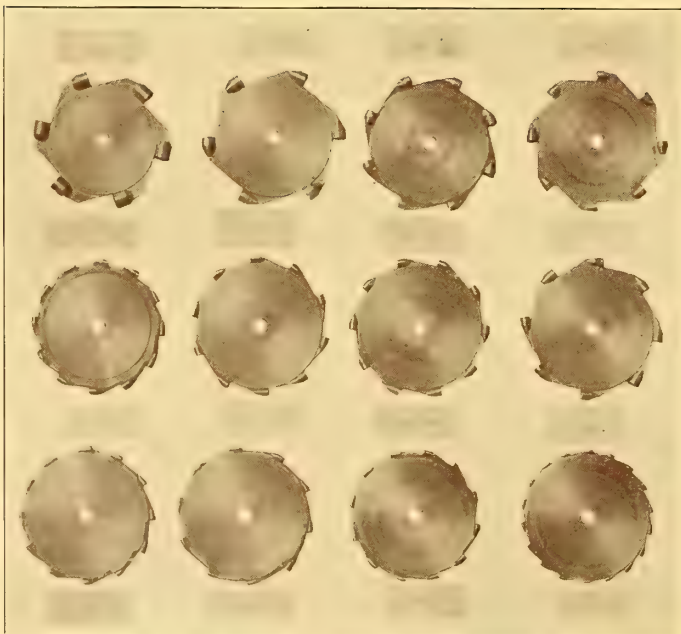
on this page. This disc revolves as the planter moves forward and as it revolves each of the cups in turn gather up one or two seeds and carries them to the proper point where the seeds are dropped from the disc cup into the conveyor tube and thence will deposit into the ground at exactly the right point. This arrangement insures that the seed shall be planted at the correct intervals without blanks and that it shall not be necessary for you to go over your field thinning the rows.

7. Glass seed hopper. This seed hopper is patented and a very important feature of this onion planter. It enables you to watch the seed at all times to know just how much seed is in the hopper and whether it is being seeded properly. The glass hopper is divided into one-half inch spaces running from one to twelve inches so that operator is enabled instantly to detect any failure of the machine to sow uniform amount of seed. The top is removable and the hopper can be instantly refilled when it becomes empty.

8. Adjustable shovels for closing up furrows after the seed is deposited in moist ground. The shovels fill in the row or furrow in such a way that every seed is covered to uniform depth with absolutely no dry soil coming in contact with the seed.

9. The adjustable roller which rolls or packs soil as the shovels which are located in front have closed the furrow. This patented steel roller is turned absolutely true and it is thus possible for us to use a scraper that works to perfection, making it impossible for the roller to clog under even the most unfavorable conditions.

10. Scraper attached to roller wheel. This scraper as above stated is absolutely perfect because of the duration of the steel roller. It prevents the roller wheel from accumulating or pulling up soil that covers planted seed. It also prevents clogging of the roller and all rolling and packing is done properly and evenly.



We can furnish different size discs with this machine, so that it will handle any kind of seed, from cabbage to beans, to perfection.

By A. O. GILBERTSON

**K R O P
R A N K**

ST. ANSGAR, IOWA



ONE OF OUR PATENTED ONION HOES.—This tool is designed especially by us, and is the only absolutely satisfactory hoe on the market. In fact, we can keep our onion fields clean, at a much less expense since we have invented this extraordinarily handy little tool.

Our Method of Cultivating and Hoeing the Crop

This again brings us up to a very important step in commercial onion growing, namely, that of cultivating and hoeing the crop.

We will now suppose that the field of onions has gotten to the point where the young plants have just broken through the ground. This is just the time to start the wheel hoes. On an average, under normal weather conditions, this will require from five to six days.

THE KIND OF CULTIVATORS TO USE.

We have experimented with and tried out a great many different makes of wheel hoes, and have just about discarded everything but the IRON AGE. Now, the IRON AGE wheel hoes have several advantages over any other wheel hoe that we have ever tried. In the first place, the material in the knives or blades is of a much better quality, so that they will clear readily in almost any soil. The knives or blades are also made of much better material, so that they last a great deal longer. In the second place, the whole machine is made lighter and stronger; third, they have larger and lighter wheels, which make them operate a great deal easier in soft ground.



THIS SHOWS THE INTERIOR OF ONE OF OUR CURING SHEDS. You will note that the crates are piled one on top of the other in such a way that it gives the air a chance to circulate freely between the crates.

As I said a minute ago, start your wheel hoes just as soon as the young plants are out of the ground, sufficiently so that you can see the rows plainly. Right here is where a great many beginners, especially, fall down by not starting their wheel hoes in time.

The proper way to operate a wheel hoe is to set the knives in such a way that you straddle the row. In this way, all the ground between the rows received a thorough cultivation, and forms a dust mulch which is a very important factor in retaining moisture.

We always make a practice of going through our onion fields at least once a week, whether there are any weeds or not, to preserve the moisture. Remember, that "one year's seeding makes seven years' weeding." Never let a weed go to seed. Do not forget this advice, as this is one of the many secrets of successful onion growing. We never allow a single weed to go to seed, as this is the only economical way in keeping a commercial onion field clean.

At the same time that we start the wheel hoes we also start the hand hoes. You perhaps would be surprised if I should tell you that in this enlightened twentieth century, with the many large manufacturers who manufacture nothing but garden tools, that it is practically impossible to buy on the market, what I consider a first-class onion hoe.

For this reason, we have designed and manufactured an onion hoe to meet our own requirements, and this little implement has proven to be such a great success that there has scarcely been an onion grower who has visited our fields and had an opportunity to see this little tool, who has not insisted upon our making up, sometimes as many as two dozen of these hoes, for his special use.

This little hoe is made of the very hardest tempered Atkin steel and is made in such a shape that you can easily remove all the weeds from between the young plants, without stooping over, as you will notice that it has three distinct sharp points.

The special advantages that this little hoe has over any other tool offered on the market, are: First, its extraordinary light weight, weighing a trifle less than one pound; second, its extraordinary quality of steel, so that

By A. O. GILBERTSON

**K R O P
R A N K**

ST. ANSGAR, IOWA

it will retain its sharp, keen edge almost indefinitely; third, it is shaped in such a way that it removes all necessity for pulling any weeds by hand, the operator being able to clean out a field of onions without getting down on his hands or knees, or even stooping over.

The critical time in keeping an onion field clean is the first time that you go through your field. As a rule, even in extraordinarily weedy ground, if you get the ground thoroughly cleaned out the first time, you will not experience a great deal of trouble in keeping it clean

later on, as by the time that you go through your field with hand hoes the second time, the young plants have become of sufficient size, so that hand hoeing is made comparatively easy.

After I have gone through my onion field the first time, with hand hoes, I find it comparatively easy for two men to keep my entire forty-acre field clean, as far as the hoeing is concerned. Of course, you must not forget that I am talking about my forty-acre field of onions that has been kept clean for a large number of years.

Rolling of the Crop

A great many of my customers, especially beginners, have written me the past season, as to the advisability of running a roller over their onions, in order to have them ripen uniformly. Now, we have never practiced this rolling of our onion fields, and I do not believe that it would do any good. In the first place, if your onions do not fall over and ripen naturally, I do not believe that you would do them any good by rolling the tops down, as you are liable to bruise them, and do them more harm than good by the operation. If your onions do not ripen naturally it shows that something is wrong either with your soil or with your onion seed.

In most cases this failure of your onions to ripen properly is caused by one of two things; either your soil is deficient in potash and too rich in nitrogen, or it may be that your soil is deficient in potash, even though it has the right amount of nitrogen. Remember that too much nitrogen in the soil produces too much top.

This brings us back to the same proposition that I went over thoroughly with you in my chapter on the

soil which you will find on page 6. Remember that the richer your ground is made before your crop is planted, the earlier and more uniform your crop of onions will ripen, also the longer you grow onions on the same field, the earlier they will ripen.

It sometimes happens that your onions will not ripen, although they have produced a large bulb, and that they remain green until late in the fall. In this event, I would advise you to pull them and throw them in windrows, and let them lie in this way for a few days, until the tops are thoroughly wilted, after which they should be removed to some building where the tops become dry, or almost so, before they are stripped or topped. By all means, do not top or strip the onions of this kind until the tops become entirely dry.

If you will handle onions in this way, even although they do not show a tendency to ripen naturally, you can make fairly good onions out of even a crop of this kind.



A BIRD'S-EYE VIEW OF OUR FAMOUS FORTY-ACRE FIELD, FOR WHICH WE HAVE A STANDING OFFER, FROM AN EXPERIENCED ONION GROWER OF PLEASANT VALLEY, IOWA, OF \$1,200 PER ACRE, OR \$48,000 FOR THE FORTY-ACRE TRACT.—This photograph was taken June 10th and will give you a good idea of how an onion field should look when intensive farming methods are practiced.

OUR MASTER ALTON AND GRANDPA IN THE FOREGROUND, ON THEIR DAILY INSPECTION TRIP, LOOKING OVER THE FIELDS.

By A. O. GILBERTSON

**K R O P
R A N K**

ST. ANSGAR, IOWA

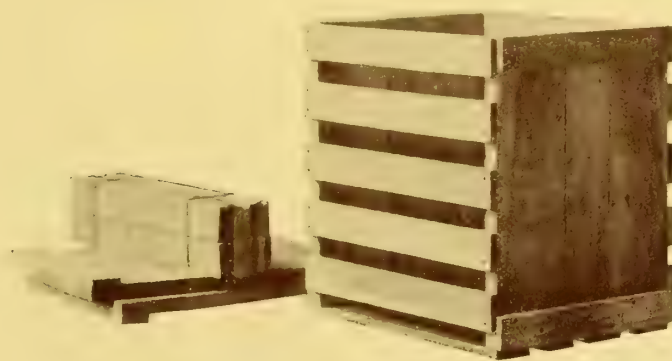


ONE OF OUR CREWS, SCREENING THE ONIONS, READY FOR MARKET.—We always run our onions over a screen with a mesh of 1½ inches, so as to remove all surplus leaves and dirt.

Harvesting the Crop

As the harvesting of a large crop of onions is no small undertaking, even under the latest and most improved methods, we have given this part of the work special study, and under our special methods, we believe that we have cut the cost of harvesting the bulbs almost in two.

The best way of harvesting a large crop of onions economically is by the use of the bushel crates. We have used this method of harvesting our onions, that is, in bushel crates, for a large number of years, and have enough crates to hold the entire crop.



THIS IS THE STYLE OF CRATE THAT WE USE IN HARVESTING OUR CROP.—The material for these crates, in the flat, can be bought from any box factory. We buy ours from the Coffin Box and Lumber Company of Minneapolis, Minn. The last quotation that we had on these crates in the flat, f. o. b. Minneapolis, was \$120 per thousand. The size of this crate is 16 inches long, 16 inches deep, and 12 inches wide. This size crate holds just one bushel. This makes a very strong and durable crate, and if handled with judgment will last almost a lifetime, as some of the crates that we have in service today have been used continuously for the last 22 years, and are still in good serviceable condition.

Just as soon as the crop is ready to harvest, which in our locality is about the middle of August, we distribute the onion crates in rows over the fields, a sufficient distance apart so that our teams and loading platforms can easily pass between the rows of crates after they are filled. In other words, we aim to put about eight rows of onions to each row of crates.



THIS PICTURE shows one of the low-wheeled wagons which we use exclusively in the handling of our onions. It is our own construction, 16 feet long by 5½ feet wide, just wide enough to accommodate four rows of crates or 60 bushel crates to the load. It is the best type of wagon for onion harvesting.

By A. O. GILBERTSON

**K R O P
R A N K**

ST. ANSGAR, IOWA

We furnish our onion strippers, who usually consist of women and school children, not less than ten years old, with the best grade of sheep shears. Our strippers go through the fields, after the crates are distributed, and pull the bulbs with one hand, and with the sheep shears in the other hand, they clip the bulbs, allowing them to fall directly into the crates. In this way the bulbs are handled only once, in getting them from the field into the crates.

We always make a practice of running a small V-shaped knife, which we attach to our IRON AGE wheel hoe under the rows, in order to cut the onions loose. This enables the strippers to not only accomplish more work, but of a better quality.

The average price that we pay our strippers is about 21½ cents per bushel crate. You will also notice that in the photograph where we show our harvesting scene, the onion tops are all left at one end of the crate. Now this is very essential, from the fact that we have found from experience, that in growing onions on the same field year

after year it is absolutely necessary to remove the tops from the fields, and for this reason we have our strippers leave all the tops in one end of the crate, as this can just as well be done by the strippers without any extra work on their part, as this will greatly facilitate the removal of the tops from the field, after the onions are hauled off. I believe it is from this fact that we have always been careful to remove all the tops from the field every year, that we have never been bothered with any diseases on the bulbs or roots.

HILLING OF THE BULBS.

While this may not be absolutely necessary in all localities, we always make a practice of going through our onion fields just about the time that the bulbs are half grown, with a special tool, of our own construction, attached to an IRON AGE single wheel hoe.

This shovel or wheel hoe throws the dirt up against the bulbs and prevents them from bleaching or sun scalding. The bulbs protected in this way usually come through with a far better color.

Topping or Stripping the Onions

A great many beginners especially make the mistake when they come to harvesting their onion crop to cut the tops too short. You should instruct your onion strippers to leave the tops at least one inch long. In this way it will give the tops a chance to cure or shrivel up, not allowing any air to get to the bulbs proper. If the tops are cut off too close to the bulbs it will result in a rot later on, by allowing the air to penetrate into the bulb.

Another method of harvesting onions in the large onion districts in the East is to pull ten, twelve rows, and rake them into windrows, allowing them to lie in the sun and cure for several days, before they are stripped. After they are stripped they are put into bushel baskets, and then finally dumped into sacks, and loaded either into cars and shipped to market, or stored in their warehouses.

Now, there are several objections to this method; in the first place, if you allow your bulbs to lie in the field after they are pulled, they will bleach out; second, you can readily see that you will be forced to handle your bulbs two or three times, and naturally, in a large crop of this kind, every time that you handle them it means additional expense, while under our system, the bulbs are actually handled only once, from the field to the crates.

Another objectionable feature in this way of handling is that by putting your onions on the market directly from the field, without curing them, is not creating much of any reputation for your bulbs in the market, as onions should by all means be cured sufficiently so that they will peel off nicely, when run over a screen before they are sacked.

In handling our onions under our methods, by hauling them directly from the field into our curing sheds, and in not allowing them to cure out in the sun, we preserve that high, dark, rich color, for which our strain of

onions is noted. This alone sometimes means as much as five to eight cents per bushel extra.

We never aim to leave our onions in the crates out in the sun, in the field, more than one day. Usually, they are hauled from the field into our store house the same day that they are harvested, where they are allowed to cure out from four to six weeks, and in curing onions in these well-ventilated sheds, the bulbs will retain their dark rich color.

I also wish to call your attention to the photograph which shows one of our low-wheeled wagons, which we use exclusively in the handling of our onions. The bed of these platforms, which, by the way, is of our own con-



ONE OF OUR CURING SHEDS.—We have several of these curing sheds, with a capacity of about 60,000 bushels. In this way it is possible for us to cure all our onions without exposing them to the sun. This is very essential in order to preserve the high color always produced in our Grandpa's Pride.

By A. O. GILBERTSON

**K R O P
R A N K**

ST. ANSGAR, IOWA



I HAD THIS PHOTOGRAPH TAKEN IN HONOR OF THE ONE LONE SCULLION OR THICK NECK ON OUR ENTIRE FORTY-ACRE FIELD THE PAST SEASON. CAN YOU FIND IT? IT ALSO SHOWS THE VILLAGE OF ST. ANSGAR IN THE BACKGROUND.

struction, is sixteen feet long and five and one-half feet wide, that is just wide enough to accommodate four rows of crates, or sixty bushel crates to the load. A platform of this kind can be built very inexpensively and after you have used one, you will never try to handle onions without one, in a commercial way.

After our onions have been cured out thoroughly in our curing sheds as shown in the photograph, which process usually requires about four to six weeks, our onion bulbs are run over a screen, same as shown in photograph. This screen removes all surplus dirt, which may have adhered to the bulbs, as well as all leaves, leaving the onions entirely clean.

If the price at the time that we screen our onions is satisfactory, they are run from the screen directly into sacks and loaded into cars. However, if we decide to hold our onions for storage, they are run from the screen back into the crates, and as soon as cold

weather sets in, they are loaded into our large storage cellars, and put away for early spring shipments.

On an average, onions will sell for more than twice as much in the late winter and early spring as they do in the fall, owing to the fact that the average strain of onions is usually a poor keeper, and for this reason, sound, dry onions, in the later winter and early spring, are always scarce, and will bring a good price. Even under these conditions it will hardly pay to store your onions for winter and early spring shipments, unless you are growing a special strain of onions that are long keepers, as the shrinkage on ordinary onions will usually more than offset the extra price. However, we have always made our best money on the onions that we store, from the fact that our onions are especially bred up for long keepers, and the shrinkage is reduced to almost nothing, while the price is usually at least double, late in the spring, to what it was in the fall.

Storing the Bulbs

It may be of interest for my readers to have a few hints on some things that are essential in storing the bulbs. I am showing you in the photograph on page 20, one of our storage cellars. This basement has a storing capacity of a trifle over 20,000 bushels. You will note that the upper eight feet of the walls are lined with hollow brick, in this way furnishing a double air space in the walls, which makes it as nearly frost proof as possible. We would also advocate, when possible, to have a cement floor, as this has a tendency to keep your cellar dry, as this is a very essential matter in storing a large quantity of onions. The air should be kept just as dry as possible.

There is usually more trouble to keep a store house of this kind cool enough, as the tendency is, in storing a large quantity of onions, in this way, for your store-

house to become too warm. You can readily overcome this by providing ventilators that will regulate the temperature in your storage cellar, and keep it just above the freezing point. Of course, this is something that we do not pay any attention to, from the fact that we have never had any trouble in keeping our onions. The only thing that we are particular to provide for is that the temperature is dry and even.

You will also note that our crop is stored in bushel crates, thus making an ideal way of both storing and handling your bulbs.

In case your storehouse should become too damp, an easy way to absorb this moisture is to place a bushel or two of unslacked lime in your basement. This lime will take up all surplus moisture.

By A. O. GILBERTSON

K R O P
R A N K

ST. ANSGAR, IOWA

Shipping in Cold Weather

If your onions are put into storage for late winter or early spring market, it is sometimes necessary for you to sell these onions during cold weather, as it is at this time that the bulbs usually bring the best price.

Now, in order to ship the onions safely during cold weather, it is well to take careful precautions by putting three ordinary oil heaters into your car, and heating it thoroughly for at least thirty-six to forty-eight hours before the bulbs are loaded into the car, provided the weather is very severe.

The best way to do this so as to reduce all danger of a fire, by having your stoves upset in the car, is to have them hanging from the roof of the car by wire so that the stove will come within about one foot of the floor of the car, one stove being hung in each end, and one in the center of the car.

The object of heating up a car thoroughly in shipping onions in cold weather is to get the car dry, and in this way the material with which a refrigerator car is packed, as well as the walls of the car become thoroughly heated, and will retain this heat for a long time.

If you are careful to load your onions directly from your cellar, into the car, sacked, of course, you can ship your onions safely even though the thermometer registers to 10 degrees below. A car in motion will stand frost a great deal better than when it is standing still. Consequently, you should get your car in motion as soon as possible after it is loaded.

The figures given below show the cost of producing one acre of Gilbertson's Grandpa's Pride onions, also the selling price of these onions so that you can see at a glance how much profit you can make off of them. It will be noted in the estimate and cost of raising a bushel of onions no account has been taken of the expense of thinning the rows for the reason that if you use the improved onion planter the seeds will fall evenly and row thinning is entirely unnecessary.

Plowing	\$ 1.50 per acre
Preparing the ground, such as pulverizing, rolling, planking, etc.	2.50 per acre
Planting the seed....	1.00 per acre
Two and one-half pounds of seed, at \$3 per pound.....	7.50 per acre
Wheel Hoeing	8.50 per acre
Hand Hoeing	6.00 per acre
Topping or stripping, at 2½¢ per bushel	30.00 per acre
Distributing crates and hauling crop into curing sheds, 3-4¢ bushel	9.00 per acre
Screening, sacking and loading into car, 1¢ a bushel....	12.00 per acre
Interest on real estate at 6 per cent, \$1,200 per acre	72.00 per acre
Total cost	\$150.00 per acre
Yield, 1,200 bushels at 50¢ per bushel.....	600.00 per acre
Profit per acre	450.00 per acre



Master Alton with a bouquet of his favorite "flowers"

The Question of Overproduction in the Future

In giving my views on this subject, it may be well to bring in here at this time and to answer the question that has been asked of me by a great many of my customers, time and again: "Why are you willing to give this experience of yours, that has taken you a lifetime of hard study and work to gain, to your customers, free of charge? Do you not believe in spreading this experience and casting it widespread the way you have been doing for several years, that you will create such an interest in onion growing that it will make an overproduction and flood the market in the future?" This is a question that I am asked almost every day from a large number of my customers.

Now, I want to look at this proposition in the same light and from the same broad-minded standpoint, in which I have always tried to look at all important questions. In the first place, I want to say that if some big-hearted fellow had walked into my onion field years ago when I was getting a whole lot of my experience and knowledge through the hard school of experience, and presented me with these facts on onion culture that I am giving you today, I have not words enough in my limited vocabulary to tell you how much I would have appreciated his kindness.

Looking at it from the standpoint of a large commercial onion grower, such as I am myself, this matter of overproduction in the future does not bother me in the least, as I can remember when father and I used to haul our onions for twelve miles, and sold them for eighteen cents per bushel, the merchant who bought

these onions showing Father the returns, which showed that he was out the freight on the transaction, even at these extraordinary low figures, and even at that time there was not one bushel of onions grown, where there are 100 bushels grown today. Even under this increased production we have never sold our onions for less than fifty cents per bushel for the last twelve years.

Now, what has brought about these radical changes, as the statistics show that there are 100 times as many onions grown today as there were some fifteen years ago, and the average price, for the last eleven years, is about eighty-five cents per bushel, which our records show. (Right here I wish to explain that our average price per bushel is comparatively higher, from the fact that we make a practice of storing our onions until early spring, and taking advantage of advanced prices, owing to the fact that our onions are absolutely bred up for keeping quality.)

Taking our average price for the last eleven years and comparing it with the average price of about twenty-five years ago, with the vast increase in the production of onions, there must be something extraordinary that has brought about this great increase in the average price of onions.

A few years I made a careful and thorough study of this situation in order to learn if possible, what was responsible, and what had brought about this increased demand for the bulb, which would warrant this steady increase of price, in the face of the enormous increase in the way of production. After looking into this matter

By A. O. GILBERTSON

K R O P
R A N K

ST. ANSGAR, IOWA

thoroughly, as nearly as I could learn, the annual increase in the foreign immigration is largely responsible for these changed conditions. Not only are all foreigners heavy users of onions, in fact it forms one of the great staples of their diet, but this has had a tendency to educate us Yankees to recognize the onion as more of a staple food for us, from the standpoint of a health producer, as onions are recognized as one of the most healthful of vegetables, to say nothing of being an actual preventive of a large number of contagious diseases.

Nothing demonstrates this more clearly than the fact that Uncle Sam recognizes the bulb as being one of the most important vegetables, as it forms one of the important staples found on the bill of fare for his soldiers.

Now in summing up these statistics and the data that I have gathered I believe that you will agree with me that the danger of overproduction of extraordinary good quality onions is very remote. Even this enormous crop that we raised the past season has not been able to bring the price down to anywhere near the danger line. It is true that a large percentage of the crop of 1912 has been sold for 25c and 30c per bushel, but that was not owing to the overproduction of onions but more to the poor quality of the bulbs as the onion crop of 1912 will go down in history as having the highest percentage of poor quality onions ever grown.

Owing to the poor keeping quality, these low standard onions were thrown on the market at almost any price. In order to demonstrate this more fully, I quote from an article in one of the leading agricultural papers by one of the leading onion growers in one of the largest onion districts in Ohio, who writes as follows:

"This is one of the greatest onion sections in the United States. Some of the farmers have made fortunes in growing onions, and not a small per cent of them have made failures.

"In this county we have about thirty-one winter warehouses for storing onions, with a total capacity of

about 1,000,000 bushels. Now, there are not more than 650,000 bushels stored in these storehouses this year. Of this amount, there will be a heavy shrinkage of from one-fourth to one-third, and possibly the loss will be even more serious than this.

"One of the largest onion shippers in this county, Allie Moore, who always stores a large amount of onions every year, reports that his shrinkage from rot and sprouting has already been 20,000 bushels.

"My own loss from the onions that I grew, has already been over 6,000 bushels this year. If this great annual loss from shrinkage of our onion crop could be prevented, by growing a strain of onions with a better keeping quality, the profit to the onion growers in this county alone would be thousands of dollars."

This report, coming as it does, directly from the largest onion grower, in one of the largest onion districts in the United States, and bearing directly on the enormous value of growing a strain of onion seed that can be put into storage for the winter and early spring market, without the least amount of shrinkage, ought to open the eyes of everyone interested in commercial onion growing to the importance of procuring seed from a strain of onions that has been especially bred up for keeping purposes.

In summing up my final argument on this subject, it refers back to the same proposition that I told you about in the first part of this book, namely, that I have never seen the time in the last fifteen years that good, sound, dry onions did not bring an extra good price, during March and April, almost regardless of what the onions brought the previous fall. I believe that I have gone into this important subject thoroughly, so that you can readily see that the chances of over-production in the future do not need to worry anyone who can produce onions of extraordinary keeping quality.

When we read the statistics from our government reports stating the millions upon billions of bushels produced in this country, it would naturally lead anyone to believe that our soil is producing to its fullest capacity,



OUR 40-ACRE ONION CROP AT HARVEST TIME. This picture shows our method of arranging the crates for convenience in gathering them and loading the onions into the wagons. Every little detail that saves time or labor adds to your profits. Scientific management means increased farm profits.

By A. O. GILBERTSON

**K R O P
K R A N K**

ST. ANSGAR, IOWA

and that we had reached the limit of the productiveness of our soil. However, if we stop to consider the millions upon millions of acres that are devoted to agricultural pursuits in this country, and especially, if we turn to the government statistics, and look up the average yield of our different farm crops, it should not take us long to realize that there is something wrong somewhere.

Now, for instance, look up the productiveness of the soil of some of our foreign countries, Germany, for instance, which has 55 per cent of her total land area under cultivation, and 25 per cent of it in forestry.

Now, while there are no restrictions with reference to farm crops, as to the yield, etc., but the laws especially specify that a man cannot cut down a single tree, unless he plants one to take its place.

The Germans must surely be credited with knowing how to farm intensively, when we take into consideration that they support 60,000,000 people on an area smaller in size and less fertile than the combined size of the Dakotas and Montana, and less is heard of the high cost of living there than here in this country, notwithstanding the enormous area of fertile fields in this country.

Wonderful Strain of Onions

Gilbertson's Grandpa's Pride Globe Onion yields heavier, weighs more, is a more perfect globe, has the highest color and the best flavor, and is absolutely the longest keeping strain of onions in existence today.

I know from the many experiments that I have made with other strains of onions offered on the market that my Grandpa's pride is absolutely the longest keeping strain of onions offered on the market today.

These wonderful results were not brought about by any haphazard guesswork, but are the results of over thirty-five years of careful scientific selection and restriction. Every fall, before the onions are harvested, I go over my onion field, and make a thorough and scientific selection of my seed stock for the following year. In making this selection, every bulb that is saved, for next year's seed stock, must come up to a certain standard of

perfection; such as a perfect globe, high color, small neck, and must be almost as sound as a rock.

These bulbs are then thoroughly air cured, and when cold weather sets in, are kept in rather warm storage cellars throughout the winter. The reason that I keep my bulbs for seed, stored in an extra warm cellar is to show if there is any tendency on the part of the bulbs to sprout and soften during the winter. For this reason, the bulbs are again resorted just before they are set out for seed, and all objectionable bulbs that may show any sign of sprouting or softening are rejected and only bulbs that have carried through the winter in perfect condition, almost as sound as bullets, are used for my seed stock.

I do not claim that this careful and thorough selection is any more than the ordinary intelligent man can do, provided, of course, he understands the correct type



A DISH OF OUR GRANDPA'S PRIDE YELLOW GLOBE ONIONS.—There is practically no difference in our two strains except in color. Our red strain may possibly be a trifle heavier yielder.

By A. O. GILBERTSON

**K R O P
R A N K**

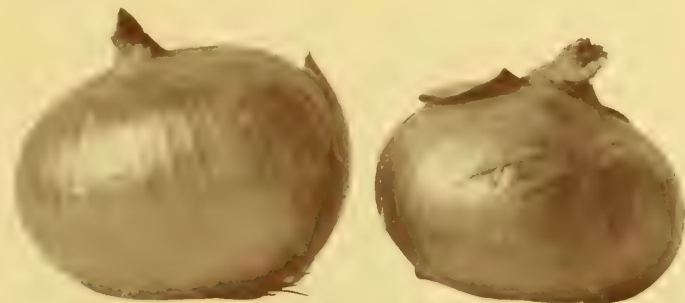
ST. ANSGAR, IOWA

of onion to select. What I do claim, however, is that while there may be onion growers who will select, and have selected the finest bulbs for their seed stock, for a number of years, and thereby have produced a fairly good strain of onions, yet when it comes to a record of a continuous, thorough, systematic selection, covering thirty-five years of not only a thorough and systematic selection of the finest and most perfect bulbs from the fields, during the fall, but the same thorough selection in the spring, after the bulbs have passed the winter in an extra warm cellar—this, I claim, is the selection that is the secret of the whole game, as by this selection, you weed out any bulbs that show any weakness in the way of softening or sprouting.

Now, I can give you one reason in particular, why I know that the majority of onion growers, although they claim to be systematic and scientific growers of onions, do not make this last, or spring selection of their seed stock. The reason is this, that instead of placing their bulbs in storage, they store them out of doors, and allow them to freeze up solid, purposely, so that they will carry through the winter in what they term, "perfect condition." In the spring, they are removed and set in the ground in this frozen condition, and allowed to thaw out after they are set out for seed stock. This, of course, absolutely prevents anyone from making this last, and as I term it, the most important, selection of all.

The flat onion has seen its day. The market today demands an absolutely perfect, globe-shaped onion. A globe-shaped onion has several advantages over the flat variety: First, it yields heavier, and is not nearly so apt to absorb moisture at the neck, at the time of the growing season, which always caused more or less shrinkage in the way of rot; second, it is much more attractive when placed on the market than any of the ordinary flat varieties; third, it will produce a far less per cent of scullion, in fact, this is one of the good qualities of my Grandpa's Pride, it will not produce any scullions.

High color is also another important quality of this onion, as highly-colored onions always command a better price when placed on the market than those of a faded, bleached color. My Grandpa's Pride Red Globe Onion has a dark rich red color, and my Grandpa's Pride Yellow Globe Onion has a dark, rich orange color.



TWO SPECIMENS OF VERY UNFAVORABLE SHAPE.—Onions of this shape do not sell well on the market. I also want to call your attention to the large tops or necks in proportion to the size of the bulb. Bulbs of this kind always have a tendency to grow too large a neck, which are always more or less subject to water-soaking. We paid a premium for the seed that produced these bulbs, and was supposed to come from a well-established bulb-shaped strain of onions.

I secured these two bulbs from a large onion district, and they represent a fair average of the shaped onions that are grown in that district. While they are not exactly flat, we consider them far from perfect globes. Onions of this shape have seen their day, as they are not nearly as attractive when placed on the market as perfect globe-shaped onions.

They are of unusually good high color, and have an extraordinarily mild flavor.

My Grandpa's Pride Onions are wonderful drought resisters and will produce far better results in a dry season than any other strain of onions that I have ever tried, from the fact that I have developed, in this strain of onions, a wonderfully strong root system, that penetrates the soil deeply. This is a very important point, as it happens very often, even in this locality, that although we have sufficient rainfall to mature any ordinary crop, and even in a season that is considered above normal for moisture, we will have a drought, beginning the last part of June, and the first of July, or just about the time that the bulbs are bottoming.

For this reason, it is very important to grow a strain



A SPECIMEN OF OUR GRANDPA'S PRIDE LONG KEEPER, THE RESULT OF THIRTY-FIVE YEARS OF SCIENTIFIC SELECTION AND RESTRICTION. Isn't it a "beaut?"

of onions with a thoroughly developed root system, that will penetrate the soil sufficiently to carry them over a dry period, without injury, in such a way that when the drought is finally broken, they will not be stunted, but as soon as the drought is over, they will mature into full-sized onions.

I am showing in the accompanying photograph, an oblong strain of onions, for the purpose of demonstrating one of the objectionable features of a strain of onions of this shape. You will note, in the first place, that they are not attractive looking; in the second place, you will note that they have an extraordinarily large top, which, of course, is the most important and serious objection to onions of this shape, as there is always a tendency for onions of this shape, with a large neck, to water-soak, which always causes heavy shrinkage later on, in the way of decay.

I am also showing, in the accompanying photograph, a few specimens of what we consider a medium flat variety. The objection to this shape of onion, in the first place, is that they will not yield nearly as heavy; second, they are not nearly as attractive looking when placed on the market; third, they also have too large tops.

By A. O. GILBERTSON

K R O P K
R A N K

ST. ANSGAR, IOWA

In the accompanying photograph, I am showing you the results from a bulb with too large a top, which became water soaked during the growing season, and I have cut this onion across the grain, to show the effects it will have in the way of decay, when moisture once gets inside of a bulb.

You will note the dark line in photograph, which shows where the bulb has started to decay. From outside appearances, the bulb is apparently perfect. However, in cutting a cross section, it shows that it has developed decay from the inside.

Another objectionable feature to both the oblong and flat varieties of onions that I have shown in the accompanying photographs is that the onion is not solid enough, which also causes the onion to water-soak more readily. You can always detect the solidity of our onions. They weigh more heavily than any other onion that is found on the market today. This has been brought about by breeding the bulbs up for solidity, with a record of thirty-five years back of it.



PARTIAL VIEW OF OUR STORAGE CELLAR IN WHICH OUR ONIONS ARE STORED FOR WINTER AND EARLY SPRING DELIVERY.

Grandpa's Pride Superiority Summarized

Points of Superiority that I have set up as a Standard to Produce in my Wonderful Strain of Grandpa's Pride Long Keepers. The Results of Over Thirty-five Years of Careful Scientific Selection and Restriction in the Breeding up for High Quality in one way of my Special Crops, and what this Extraordinary Quality Means to the Commercial Grower

First, "EXTRAORDINARY LONG KEEPING QUALITY."

I absolutely know from the many experiments that I have made with other strains of onion offered on the market that my GRANDPA'S PRIDE is the longest keeping strain of onions grown in the United States today.

Now, I know that this is a very strong statement to make, but I am ready to prove it, from the fact that I have on several occasions kept my GRANDPA'S PRIDE onions over one year from the time they were harvested, in an ordinary cellar, and at the end of fifteen months they were in perfect condition.

As I told you, in another chapter of this book, this long keeping quality of my GRANDPA'S PRIDE hasn't been any guesswork. It did not happen over night. It was not an accident, but the result of over thirty-five years of careful scientific selection and restriction.



A VIEW OF GRANDPA'S PRIDE ONIONS in full flower. Observe the hardiness of these plants and how uniformly they are spaced in the rows. These onions were planted with one of our improved onion planters described on page 10.

Please turn back to the chapter, "A WONDERFUL STRAIN OF ONIONS, BACKED UP BY A THIRTY-FIVE YEARS' RECORD," and read again how I have accomplished this wonderful keeping quality in my GRANDPA'S PRIDE. Turn to page 22 and look at the photograph which shows two crates of my GRANDPA'S PRIDE, that were photographed after they had been kept in storage for over one year, and then take your pencil and paper and sit down and figure out just what this extraordinary keeping quality means to you, as a commercial onion grower.

Second, "AN ABSOLUTELY PERFECT GLOBE."

The best evidence that I can give you as to the globe shape of my GRANDPA'S PRIDE is to again refer you to this same photograph, which shows the two crates of my GRANDPA'S PRIDE. Every bulb looks as though it had just been turned out of a mold.

Third, "SMALL NECK."

Every year, when I come to go over my fields and select the seed stock for the following year, I am more and more impressed with the importance of a strain of onions with an extraordinarily small neck, from the fact that our growing season seems to become more extreme every year, in the way of excessive moisture during the growing season, and for this reason I cannot emphasize too strongly the importance, in dollars and cents, to the commercial onion grower, of growing a strain of onions with an extraordinarily small neck. For this reason, I lay particular stress on this point in my selection every year.

The special advantage of a strain of onions with an extraordinarily small neck is, first, it will not absorb moisture during the growing season, which always re-

By A. O. GILBERTSON

K R O P
R A N K

ST. ANSGAR, IOWA



A DISH OF MY GRANDPA'S PRIDE LONG KEEPERS, RED GLOBE, MORE PERFECT EVEN THAN APPLES.—This is the kind of bulbs that will make you money when put in storage.

sults in heavy shrinkage later on, in the way of rot; secondly, it will reduce the percentage of scullions thick necks to a minimum. This point is proven particularly on our large onion fields, as you will readily see, by the different photographs we show of our onion fields, during harvest time, that they absolutely produce no scullions whatever.

Third, it is very essential in a long-keeping strain of onions that they have a small neck, from the fact that a bulb with a small neck will have a tendency to seal up and exclude the air from the bulb.

Fourth, "A HEAVY YIELDER."

While in the selection of my seed stock every year, I have always aimed to select large, uniform specimens so as to make this strain of onions an extraordinarily

heavy yielder, yet I have never sacrificed any of the other important qualities for large size, and especially have I laid stress on solidity.

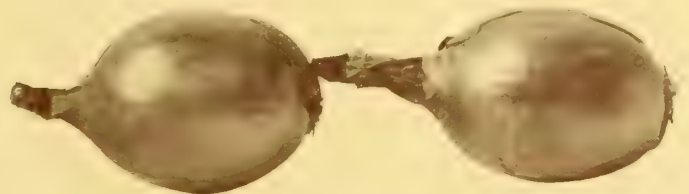
I have actually demonstrated, by the scales, that my GRANDPA'S PRIDE onion, owing to its solidity, will weigh more than any other variety of onions that I have ever grown on my experimental grounds. This, in connection with its large, uniform size, absolutely makes this one of the largest yielders grown anywhere today.

Fifth, "HIGH COLOR."

This is a point that a great many onion growers overlook. However, I have found that in putting your crop on the market that it means a great deal, especially so to the large commercial grower, from the fact that any large, commercial grower cannot always harvest his onions just at the proper time, and it very often happens that a large part of your crop will have to remain out in the field some time before it is harvested, after it has ripened.



NOT A WEED IN THE PATCH. This picture shows the care we exercise. Every weed has been eliminated and from one end of the tract to the other there is nothing but onions. This is a portion of the onion tract that yielded us 1,200 bushels per acre.



Now, even under favorable conditions, a bulb will always bleach out more or less, if left out in the field after it is ripe, and if you are growing a strain of onions with just an ordinary color to start with, you will find

By A. O. GILBERTSON

**K R O P
K R A N K**

ST. ANSGAR, IOWA

that if these onions are left out in the fields, under these unfavorable conditions, they will bleach out very badly, but if you are growing a strain of onions with a high color, it will actually mean dollars and cents to you, when it comes to marketing these onions.

I know from actual experience, that we have received as high as five cents per bushel more for our onions, over and above what our neighbors received, by reason of the color alone.

Sixth, "EXTRA EARLY."

In our scientific work in breeding up these onions, we have not overlooked this important feature. As I told you in another chapter of this book, our methods of going over the fields in making our selection for our seed stock, that this first selection was made just after the bulbs commenced to ripen. In selecting our seed stock every year at this time, it has also been possible for us to produce an extra early strain of onions.

Seventh, "A GREAT DROUGHT RESISTER."

I could refer you to a large number of customers who have been growing our GRANDPA'S PRIDE for the last three or four years, who particularly testify as to the drought-resisting qualities of this wonderful



A CROSS SECTION OF A RED WETHERFIELD.—Note the dark ring, which is nothing more or less than pure, unadulterated decay, caused by the bulb absorbing moisture at the neck at the time the onion was growing, which always causes decay later on. From outside appearance, before I cut this onion, it was apparently sound.

strain, as compared with any other onion that they have ever grown.

These facts are borne out by the experiments that we have made on our own fields as comparing our GRANDPA'S PRIDE with any other strain of onions that I have grown on my experimental plot.

Eighth, "COLOR AND MILD FLAVOR EXTRAORDINARY."

Being particularly fond of onions myself, I can testify personally as to the mild flavor and extraordinary good quality of my GRANDPA'S PRIDE. So marked is the high quality and mild flavor of this onion that we have a large number of customers who will not use any other kind.

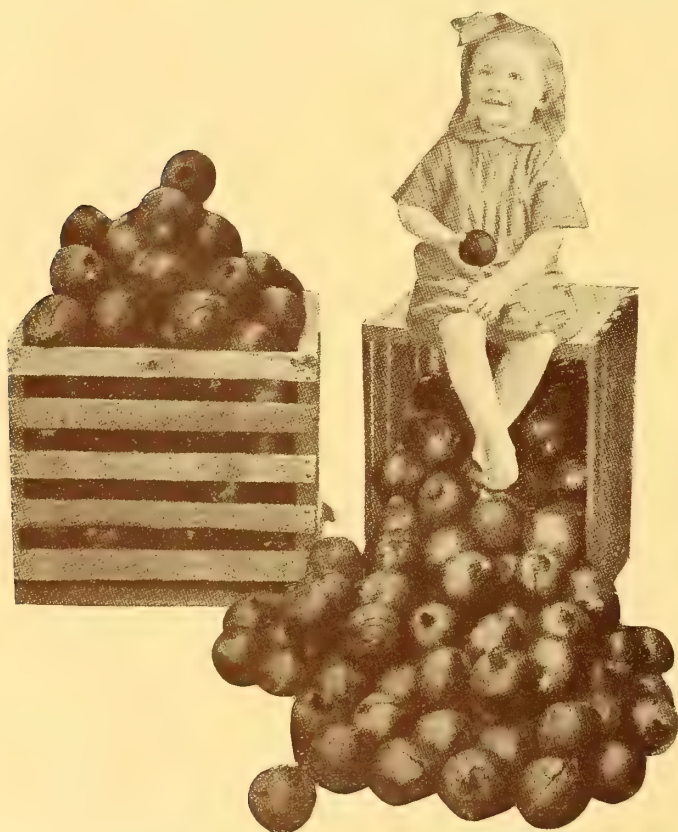
WATER-SOAKED BULBS.

I am showing you, in the accompanying photograph, an onion that owing to its large top and flat shape, has absorbed too much moisture at the neck during the growing season, which has caused the bulb to decay. Apparently this bulb was sound, looking at it from the outside. However, in cutting it across the grain, you can readily see that one or two layers have started to decay.

As I said before, the cause of this decay was first, that the bulb was too flat; secondly, that the bulb had too large a neck; third, that the bulb was too soft, making it an easy victim for absorbing moisture, which also results in decay later on.

You can therefore readily understand the great advantage from the standpoint of a commercial onion grower, at least, to grow an onion that is especially bred up for small neck, globe shape and solidity.

All of these three points are necessary in order to insure the bulb against absorbing too much moisture at the top during the growing season.



A CRATE OF MY FAMOUS GRANDPA'S PRIDE LONG KEEPERS.—This photograph was taken over one year from the time that these onions were harvested, and represents the kind of bulbs that we select for our seed stock, which produces the seed that I am offering my customers. These onions were kept in an ordinary cellar and have passed one winter and summer without showing the least sign of decay or sprouting. I want you to sit right down and figure out just what this long-keeping quality means to you in actual dollars and cents, from the standpoint of a commercial onion grower.

By A. O. GILBERTSON

K R O P
K R A N K

ST. ANSGAR, IOWA

Diseases of the Bulb

While we have never been bothered with any fungous or insect pests in our onion fields, there is more or less trouble in this respect in the older onion-growing districts. This trouble is usually brought about by carelessness on the part of the grower.

For instance, in some communities in the older onion sections of the East, the growers are bothered to quite an extent by the smut or perhaps, as it is more commonly known, root rot. This is a fungous disease, which in some parts of the older onion districts has become so destructive that it is necessary for the grower, in order to guard against this trouble, to carry a can of formaldehyde solution on his onion seeder, so arranged that a small part of this solution will drip into the row just after the seed is deposited in the ground, and in this way, protects the young plants against this disease, until the roots of the plants have become established. In practicing this method they have practically overcome this trouble.

Perhaps the most destructive of them all is what is known as the onion tripe, or a more common name is onion louse. We have never been bothered with this insect pest here in our locality. It is only in some of the older onion sections that the onion louse has become bothersome, although the onion louse does not

seem to flourish in the older onion districts even, only in an extremely dry hot season. This is the only time that it seems to get in its deadly work, as it does not develop during a season when we have a normal amount of moisture.

As I said before, I believe a great deal of this trouble is brought about by the carelessness of the grower himself, as a great many growers allow rubbish of every description, such as onion tops, decayed onion, etc., to lie on the ground, and be plowed under from year to year. This forms a natural breeding place for all fungous diseases and if practiced for a number of years, is liable to cause a great deal of trouble. For this reason, we have always made it a practice to remove all onion tops and decayed onions from the field every year before the land is plowed, and it is my candid opinion, based on my own experience that if a grower is careful in keeping his field clean from weeds, as well as being careful to remove all onion tops and decayed onions, etc., from the fields and not allow them to be plowed under, that he will not experience any trouble from fungous diseases or pests on his onion crop. At least, we have never been bothered, although we have been growing onions on some part of our field for the last thirty-five years.

Ordinary crops can't pay an adequate profit on modern high priced land. The big farm money of today is made in specialized crops. Gilbertson's Grandpa's Pride Globe Onions are a specialized crop of proved results.

By A. O. GILBERTSON

**K R O P
R A N K**

ST. ANSGAR, IOWA

**KROPK
KRANK_s**

... The ...

Gilbertson Company**KROPK
KRANK_s**

St. Ansgar, Iowa, Feb. 26, 1913.

Dear Friend:-

"MY SPECIAL TEN DAY OFFER"

I want every onion grower in the United States to try at least one pound of my Famous Onion Seed this spring, and to show you that I mean exactly what I say, I will practically cut the price in two.

I don't care if you have already bought your onion seed, I want you to try at least one pound anyway, as I want to absolutely prove to you that my Grandpa's Pride Long Keepers are different from any other onions that you have ever grown before; that they are the longest keepers, that they are the most perfect globes, that they are the largest yielders, have the highest color, that they are the best drought resisters, that they have the mildest flavor, and are the most solid and uniform bulbs that you have ever grown.

From the reports that I have received from the large commercial onion growers in Ohio and Indiana, I believe that they are realizing, this winter, as they have never realized before, the importance and value in actual dollars and cents, of growing a strain of onions that has been bred up along scientific lines for extra long keeping quality.

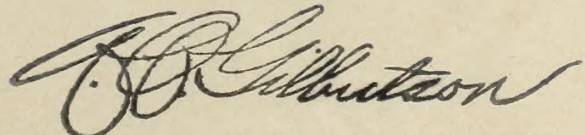
I have a report from a large grower in Ohio who reports that his shrinkage has already been 35% of the onions that he is keeping in storage. Another grower from Indiana reports a shrinkage of over 6000 bushels, or an equivalent of 20% of the onions that he is storing. Another grower reports that he has already lost over 16,000 bushels.

I am storing about 11,000 bushels of my Grandpa's Pride this winter, and on making a thorough investigation a few days ago as to how they are keeping, I failed to find a single sprouted or decayed bulb. I want to ask you as a commercial onion grower, does this mean anything to you?

As I said before, in order to be sure to have every onion grower give my onions a trial this year, I will make the following extraordinary low prices, delivered free to your station;

One-half pound,-----	\$1.25
One pound,-----	2.00
Three pounds,-----	5.00

Yours truly,



KROOK
KRAAN

Williamson Company

KROOK
KRAAN

St. August, Iowa, Feb. 26, 1913.

Dear Friend:-

"MY SPECIAL TEN DAY OFFER"

I want every onion grower in the United States to try at least one pound of my Famous Onion Seed this spring, and to show you that I mean exactly what I say, I will practically cut the price in two.

I don't care if you have already bought your onion seed, I want you to try at least one pound anyway, as I want to absolutely prove to you that my Grandpa's Pride Long Keepers are different from any other onions that you have ever grown before; that they are the longest keepers, that they are the most perfect globes, that they are the largest yielders, have the highest color, that they are the best to eat, that they have the mildest flavor, and are the most solid and uniform bulbs that you have ever grown.

From the reports that I have received from the large commercial onion growers in Ohio and Indiana, I believe that they are realizing this winter, as they have never realized before, the importance and value in actual dollars and cents, of growing a strain of onions that has been bred up along scientific lines for extra long keeping quality.

I have a report from a large grower in Ohio who reports that his shrinkage has already been 35% of the onions that he is keeping in storage. Another grower from Indiana reports a shrinkage of over 8000 bushels, or an equivalent of 30% of the onions that he is storing. Another grower reports that he has already lost over 15,000 bushels.

I am storing about 11,000 bushels of my Grandpa's Pride this winter, and on making a thorough investigation a few days ago as to how they are keeping, I failed to find a single sprouted or decayed bulb. I want to ask you as a commercial onion grower, does this mean anything to you?

As I said before, in order to be sure to have every onion grower give my onions a trial this year, I will make the following extraordinary low prices, delivered free to your station:

One-half pound	-----	\$1.25
One pound	-----	2.00
Three pounds	-----	5.00

Yours truly,

